What is a compressed air dryer system? - Inline Air Dryer

Dry air compressors are essential for a variety of industrial and residential applications. As a result， operators rely on compressed air dryers for optimal operation. This article reveals how these systems fully create functional dry compressed air.

What is a compressed air dryer system?

Compressed air always contains water vapor and other moisture that is harmful to your tools， piping and equipment. They can lead to corrosion， control failures， and ultimately equipment failure. In-line air dryers remove water vapor and moisture content from compressed air before it enters moisture-sensitive components and processes.

How do air dryers work?

Each of these compressed air dryer types has a principle of operation. However， the general function of each is to remove most or all of the water vapor content from the

compressed air. The resulting dew point of the compressed air is used as a measure of how dry the air is: the lower the dew point， the lower the moisture content， and vice versa.

This article will explore the various types of compressor air dryers and how they work.

Advantages of compressed air dryers

The use of in-line air dryers has its benefits. They include

Extending the life of piping， tools and equipment

Prevention of equipment corrosion

Effective removal of particles， water vapor and other moisture content from compressed air

Save on equipment maintenance costs

4 Main Types of Compressed Air Dryers

The following outlines the four main types of compressed air dryers that can be used for most industrial applications.

Desiccant Dryers

Refrigerated Dryers

Membrane Dryers

Chemical dryers

1. Desiccant Dryers

Desiccant type air dryers work by adsorbing moisture from the compressed air stream onto desiccant materials. These materials are placed in compartments and effective drying occurs by pushing compressed air through them.

There are two types of desiccant air dryers: heated and non-thermal regenerative. Each type has two compartments: a drying tower for adsorbed desiccant and a regeneration tower， which helps to remove the moisture adsorbed in the desiccant. However， the heat source makes them different: the former requires an external heat source， while the latter does not.

They can achieve moisture removal rates of up to 99.99%. This high efficacy makes them ideal for critical applications. However， they are more likely to have higher acquisition， operation and maintenance costs.

Contact our team today to purchase a compressed air dryer or get a quote for desiccant air dryer procurement!

2. Refrigerated Dryers

The operating principle of a refrigerated air dryer involves causing water vapor to condense by cooling compressed air. The system then collects this condensed water vapor with an internal moisture separator and feeds it to the drain. Air compressor dryers achieve this cooling with the help of a liquid refrigerant.